

Louisville Sustainability Advisory Board

Agenda

Wednesday, March 21, 2018
City Hall, 749 Main Street, Spruce Room
6:30 - 8:00pm

Chair: Allison Johanson

Secretary: Marianne Martin

6:30-6:45pm:

- I. Call to Order
 - a. Roll Call
 - b. Approval of January 17, 2018 Meeting Minutes
 - c. Public Comments on Items Not on the Agenda
 - d. Sue's Minute
 - e. Dave's Minute

6:45-7:55pm:

- I. Introduction of the new Sustainability Coordinator
- II. Discussion on RFP development for residential waste hauler contract
- III. 2 Year Work Plan/KPI Update
- IV. Board & Committee and Council update for 2018
- V. Develop and discuss topics for sustainability series

7:55 - 8:00 pm:

- VI. Log volunteer hours
- VII. Items for discussion at next meeting
- VIII. Adjourn

Meeting Packet Contents:

2 Year Work Plan/Comment Matrix
2017 LSAB Board & Committee Assignments

LSAB Board Assignments

	Louisville Board	Council Member
Allison Johanson	Parks and Public Landscaping	Mayor
Dan Delahunty	Revitalization Commission	Dennis Maloney
	Planning	Jeff Lipton
	BRAD	Ashley Stolzmann
Marianne Martin	Library	xxx
Mark Persichetti	Building Code Board of Appeals	Susan Loo
	Open Space	Chris Leh

Louisville Sustainability Advisory Board

Meeting Minutes: Wednesday, January 17, 2018

City Hall, 749 Main Street, Spruce Room

Chair: Mark Persichetti

Secretary: Dan Delahunty

- I. **Call to Order:** The meeting was called to order at 6:30 pm by Mark Persichetti. Minutes taken by Dan Delahunty.
 - a. **Roll Call:** (Members present in bold): **Seth Adams, Heather Braithwaite, Dan Delahunty**, Allison Johanson, **Laura Lvesque-Catalona. Marianne Martin, Mark Persichetti**; City-Staff Liaison **Dave Szabados**, City Council Liaison **Susan Loo**, City Assistant to the City Manager, **Emily Hogan**; Residents **Rich Chamberlain, Michael Bishop**
 - b. **Approval of Current Meeting's Agenda:** Approved current agenda with no changes.
 - c. **Approval of November 15, 2017 Meeting Minutes:** Meeting-minutes approved with no changes.
 - d. **Public Comments on Items Not on the Agenda:** None
 - e. **Sue's Minute:**
 - i. On Friday 1/19/18 from noon to two the City Council is going through the 2018 workplan. This meeting will include the solid waste hauler contract which ends in the middle of 2019. A RFP will be issued for the new contract in 2018. The council will discuss whether the HOA, commercial, and multi-family buildings to provide recycling and compost to their clients. The utility committee, a sub-commission, may or may-not make a recommendation to council. Jay Keany, council member, wanted to pass a message that RETrack was still on the table.
 - ii. On Tuesday, the city council started the budget process. Council feels that the 2-year budget was successful and they plan on preparing a two-year budget for the 2019-2020 cycle.
 - iii. The topic of bee-hives is in front of the council.
 - iv. There are other boards and commissions that overlap with the work that the LSAB including:
 - Parks and Recreation;
 - Planning;
 - Utility;
 - Business Retention and Development Community; and
 - Youth Advisory Board

f. Dave's Minute:

- i. Rec Center keeps moving along.
- ii. Building automation system is in progress. Better control, efficiency and comfort of the HVAC system.
- iii. Assembling annual reports for FY ending 2017, solar production and power production agreement.
- iv. The city will appoint a new Sustainability Specialist in the near future with a tentative start date of Feb 6th.

II. Introduction of new and returning LSAB board members: Old and new members introduced themselves.

III. 2 Year Work Plan/KPI update (Emily Hogan): The two-year workplan was revised to include City Councils discussions. Added goals and made a list of top recommended actions. The update to City Council is not currently on the agenda. During the meeting the LSAB reviewed the 12 recommended action items of the two-year workplan. Emily would like comments from LSAB in the next couple of weeks in order to keep the process moving forward. LSAB will pass comments on to Dan and he will forward on to Emily.

- a. Discussed community gardens and how the LSAB would like to address this.
- b. LSAB would like to expand the sustainability workshops that occurred last year.
 - i. Including the green business in the sustainability series may be of benefit;
 - ii. Community Gardens; and
 - iii. Composting
- c. Page 56. Mark stated that the LSAB had helped develop a zoning regulation that required all new commercial construction including multi-family that they would have equal spacing for trash and recycling. Mark would like to see the zoning code updated to include compost along with trash and recycling. Emily will discuss with planning department.
- d. LSAB asked what the raw water policy for the golf course was. The city will get back to LSAB.
- e. **Initiate/draft LSAB 2018 goals/priorities based on 2 Year Plan:**
 - i. Marianne recommended that we look at what LSAB can be doing to help move to 2-year plan along. Workshops and involvement in the waste hauling RFP were the top two items.

IV. Discussion on RFP development for residential waste hauler contract: Mark met with Kurt in Public Works to talk about the outline of the waste hauler RFP. LSAB discussed when it would be nice to talk to Kurt about the RFP. Discussions included the following.

- a. Mark suggested hosting a meeting with HOA board members to discuss including them in the city trash hauling. This option will be discussed with the City and Kurt to make sure it fits within their larger plans.
- b. REtrack – City and County of Boulder have an ordinance for hauler to track where all the waste haulers report where trash, compost, and recycling are disposed of. All permitted haulers are required in to offer all three, but customer does not have to purchase all three.

- c. An ordinance would have to be issued to include business and multi-family in the trash hauling Susan Loo brought up. Some of the golf course communities generate less compost due to lawn clippings and other material hauled elsewhere. Also, their current costs are less. Thus, what is their incentive to join? Finally, there is issue with cans being left outside due to community covenants.
- d. Kurt will present Boulder County Licensing at the Utility meeting on Friday at 8am. The Utility Committee will also hear Trash Hauling on the following dates: 3/9 – RFP #1; 5/11 RFP#2; and 7/13 – RFP#3.

In summary the board would like to see a pay-as-throw program, expanding of compost and recycling to businesses and HOAs and inclusion of RETrack in the waste hauler contract. LSAB's next step will be to reach out to Kurt to see how we can help. Attendance of the Friday Utility meeting (see item 1.e) will provide more information on progress of the waste hauler contract.

- V. **Green Business Awards Program Update (Mark Persichetti):** There were 39 business who participated in the Green Business Program. Presentation to council on March 5th meeting. A ceremony will be held on a following weekend to present the business with their awards. A public notice will be posted to recognize the businesses who participated. Mark will provide the city with the list to place on their website.
- VI. **Approve posting locations for meeting notices (City Hall, Recreation Center, Police Department, Library, and City Website):** Locations were approved by the LSAB.
- VII. **Approve meeting calendar/secretary assignments:** No objections.
- VIII. **Log volunteer hours:** See table below.
- IX. **Items for discussion at our next meeting (February 21):**
 - a. 2 Year Work Plan/KPI update and review of LSAB comments
 - b. Discussion on RFP development for residential waste hauler contract
 - c. Board & Committee and Council update
 - d. Introduction to the new sustainability coordinator
 - e. Understanding of the Solar PPA
 - f. Develop and discuss topics for sustainability series
- X. **Adjourn:** The LSAB adjourned at 8:30 pm.

LSAB 2017 Meetings Schedule, Deadlines, Meeting Assignments

If you are unable to fulfill your assignment, you are responsible for finding a replacement!

Secretary to email agenda, AND previous month's minutes to Kerry Holle: kerryh@louisvilleco.gov	Meeting Date	Chair *	Secretary *
January 8	January 18	Mark	Dan
February 12	February 21	Allison	Marianne
March 12	March 21	Allison	Heather
April 9	April 18	Allison	Laura
May 7	May 16	Allison	Seth
June 11	June 20	TBD	Mark
July 9	July 18	TBD	Dan
August 6	August 15	TBD	Seth
September 10	September 19	TBD	Heather
October 8	October 17	TBD	Laura
November 12	November 21	TBD	Seth
December 10	December 19	TBD	Mark

*A crossed-out name followed by a second name denotes a substitute.

Volunteer Hours tally: For the month of January.

Board Member	Activities	Hours
Seth Adams	Meeting prep, attendance	2
Heather Braithwaite	Meeting prep, attendance	3
Dan Delahunty	Meeting prep, attendance, sustainability series	4
Allison Johanson	Meeting prep	6
Laura Lvesque-Catalona	Meeting prep, attendance	2
Marianne Martin	Meeting prep, attendance	2.5
Mark Persichetti	Meeting prep, attendance, Bo-Co RCAB, Partners-in-Energy sessions, Meeting with Kurt, Jay & Kolby	8
	Total Hours	27.5

LSAB Board Assignments (item not discussed, but presented to show gaps and discussion for next month)

	Louisville Board	Council Member
Allison Johanson	Parks and Public Landscaping	Mayor
Dan Delahunty	Revitalization Commission	Dennis Maloney
	Planning	Jeff Lipton
	BRAD	Ashley Stolzmann
Marianne Martin	Library	xxx
Mark Persichetti	Building Code Board of Appeals	Susan Loo
	Open Space	Chris Leh

Appendix A: Notes on the 2016 Sustainability Action Plan Strategies

Notes

Notes include input from interviewees, as well as research results.

New Recommendation Action(s)

This column displays the resulting recommendations made for actions that could be taken to make progress within a 2-year timeframe on the strategies listed in the 2016 Sustainability Action Plan. These recommendations are prioritized in Appendix A, and presented in Summary form in the body of this document in the section called Summary of Recommendations.

Note that the strategies appear as they appeared in the 2016 Sustainability Action Plan (SAP), as approved by Council. Recommendations for edits to the strategies directly will be provided to the LSAB for consideration in a future revision of the Louisville Sustainability Action Plan.

Climate & Energy

#	Strategy from SAP	Notes	New Recommended Action(s)
Internal Target 1: Move towards carbon neutrality for all City operations			
1	CE-IT1S1: "Update inventory of greenhouse gas (GHG) production"	<p>Boulder County has performed a 2016 Greenhouse Gas (GHG) Inventory for the entire county, by municipality, to be complete in early 2018. The City of Louisville worked with the County's consulting firm to provide all requested information to complete this study. The County performed this inventory last in 2011 and may perform another inventory in 2021.</p> <p>The City of Louisville performed an independent community GHG Inventory in 2012, through the University of Minnesota.</p>	<ul style="list-style-type: none"> No Recommended Action
2	CE-IT1S2: Set new goals for GHG reductions	In the 2017 Louisville Energy Action Plan, the City established a goal to reduce total community-wide energy use by 1% annually, which could result in an 11% reduction over the 2015 baseline by 2027. This would directly affect GHG reductions.	<ul style="list-style-type: none"> No Recommended Action. <u>Work with Xcel Energy to provide certain percentage of community's energy through alternative sources.</u>

		<p>In addition, Louisville's City Council advanced its commitment to a healthy and sustainable community by voting to adopt Resolution 34-2017 in support of the Paris Climate Agreement, in which the United States had originally pledged to lower its annual greenhouse gas emissions in 2025 by 26 to 28 percent below 2005 levels.</p> <p>The (forthcoming) results of the 2016 GHG inventory performed by the county are expected to show that Louisville has exceeded the goals of the Paris Climate Agreement at a municipal level.</p>	
3	CE-IT1S3: Purchase lowest fuel-use vehicles practical for the City fleet.	<p>The City purchased a Nissan Leaf in 2016. This vehicle is used regularly by the IT Department and performs to satisfaction.</p> <p>Public Works and the City Manager's Office have performed an analysis of what it would cost to replace current fleet vehicles and have informally agreed on the following assumptions: 1) It is generally desired that standard fleet vehicles should be upgraded to electric, hybrid, and alternative fuel vehicles over time, as appropriate, 2) It is not cost effective to make fleet replacements without an immediate need, 3) Not all vehicles would fulfill their function requirements as electric or alternative vehicles with the current technology available, and 4) technology and cost of alternative fuel vehicles is expected to improve over the next few years. Therefore, analysis should be performed on a case-by-case basis as vehicles need to be replaced to determine cost-effectiveness and appropriateness of use, as well as technology advances and funding opportunities, with a strong leaning toward electric, hybrid, and alternative fuel vehicles where possible. This plan has been generally agreed on verbally, but could be drafted as policy to be added into an existing purchasing policy. The purchase of additional electric vehicles should be evaluated as vehicle replacement needs arise, according to a full life cycle analysis.</p> <p>Funding: Vehicles similar in function to the Nissan Leaf (~\$30,000) may exceed the current budget for most replacement vehicles in up-front purchase cost. Partial grant funding is currently available to address this gap. Current grant opportunities through the Regional Air Quality Council (RAQC), for example, will fund 80% up to the following set of maximums for electric vehicles and electric vehicle charging stations:</p>	<ul style="list-style-type: none"> • Formalize a conversion plan that requires cost and lifecycle analysis on vehicle replacements (e.g. road vehicles, riding tractor mowers) on a case-by-case basis, with a preference toward electric and lower emission vehicles, when appropriate. • Apply for a RAQC grant to install an electric vehicle charging station (EVSE) at the Recreation Center in 2018.

		<ul style="list-style-type: none"> • Electric Vehicle (EV): the incremental cost differential between an EV and the comparable gasoline vehicle up to \$8,260 • Level 2, Single Port Station: \$3,260 • Level 2, Dual Port Station: \$6,260 • Level 3, Single Connection Standard Station: \$13,000 • Level 3, Multiple Connection Standard Station: \$16,000 <p>Most likely immediate replacement vehicle request: The Police Department has identified one vehicle (non-patrol) that will be up for replacement in 2018 and would like to look into the possibility of purchasing an electric vehicle, as well as a potential EV station for the department. In addition, vehicles are in design stage which potentially could be appropriate for patrol fleet, and in which the department chief has expressed interest (e.g. 2019 Ford Police Responder Hybrid Sedan). A replacement such as this would need to be evaluated at a later date, once data is available. Based on current offerings through RAQC, as well as on stated pledges of support at a state level, it is expected that there will be an appropriate grant to provide partial funding at the appropriate time.</p> <p>In addition, the Facilities Manager has suggested that the City could greatly improve emission output by exploring electric lawn mowing equipment. According to the Parks and Recreation Department, this option has been explored and has been determined to not currently meet performance requirements. The Parks and Recreation Department will continue to monitor this going forward. The RAQC grant applies to mowing equipment and pays for 80% of the cost difference between an electric vehicle and a gas vehicle. Benefits to an electric mower would a significant reduction in GHG emissions, as well as noise pollution.</p> <p>In order to support a conversion to electric vehicles, the City will need to adapt infrastructure to meet charging needs.</p> <p>The City Manager's Office is planning to apply for a grant to install an electric vehicle charging station (EVSE) at the Recreation Center in 2018. A plan is being discussed to explore future charging stations at City facilities.</p> <p>The City has also done extensive work to evaluate a compressed natural gas (CNG) station for CNG vehicles.</p>	
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4	CE-IT1S4: Develop conversion plan for City vehicle fleet to implement new vehicle technologies as they become available for testing and use.	This strategy is covered under CE-IT1S3.	<ul style="list-style-type: none"> No recommended action. Strategy is covered under CE-IT1S3. Recommended for removal.
5	CE-IT1S5: Implement controls and policies to limit idling of City vehicles.	<p>Based on department interview feedback, any adopted policy to limit idling of City vehicles would need to consider the situation (e.g. In extreme heat or cold, should car should be left idling for comfort and/or safety?). Even so, it is generally agreed by interviewees that more could be done by staff drivers. At this time, it is not clear what could be done to implement controls, however, a staff-wide awareness campaign addressing the reduction of idling in City vehicles would be appropriate and could be quite effective. Staff may be educated about vehicle idling by both email and through general staff-wide sustainability training. The City Managers Office could work with relevant departments to determine if an official policy is appropriate.</p> <p>It should be noted that some actions have been taken by the city to reduce community-wide idling:</p> <ul style="list-style-type: none"> In coordination with DRCOG, the City assisted to complete corridor timing improvements to reduce vehicle delay/idling/emissions. In coordination with Superior, Louisville led the initiative to build the Diverging Diamond Interchange (DDI), which saved more delay/idling/emissions on the US 36 BRT route than the previous US 36 RTD Queue Jump project was achieving. 	<ul style="list-style-type: none"> Create a staff-wide awareness campaign addressing the reduction of idling in City vehicles and determine if an official policy is appropriate.
6	CE-IT1S6: Install LED traffic signals.	Nearly all traffic lights in Louisville have been converted to LED.	<ul style="list-style-type: none"> No recommended Action. Project is effectively complete.
Internal Target 2: Move Toward Carbon Neutrality for City Buildings			
7	CE-IT2S1: Aim for all eligible existing City buildings be benchmarked using the ENERGY STAR performance standards. For ENERGY STAR eligible buildings, a strategy and costs will be developed	The Facilities Manager reports that an attempt has been made within the last year to benchmark City buildings using Energy Star, with mixed results. Energy Star benchmarks energy usage (i.e. energy data from Xcel can be downloaded into a portfolio over time) and compares it to other buildings in the area. If a building is in the top 25% in efficiency comparatively, then it is considered to be an Energy Star building. Challenges with the City facilities include the lack of availability of relevant templates through the Energy Star interface. For	<ul style="list-style-type: none"> Continue to update Energy Star data on relevant city buildings annually, using data to inform strategy and costs for energy efficiency improvements.

	<p>for energy efficiency improvements.</p>	<p>example, the library at face value appears to be a good building to benchmark with Energy Star. When data was entered into the application, however, the presence of a parking garage under the building proved problematic for the assessment. Similar challenges exist with the Recreation Center, as an “Office Building” template can’t be filled out, as the facility has many features that a typical office building would not have (i.e. swimming pool, showers). Challenges exist in tracking the Police Department in comparison to other similar buildings in that the courthouse is attached. It functions as two separate buildings, with different hours. The Golf Course, too, is not a standard facility with standard energy usage needs.</p> <p>Still, the Facilities Manager thinks the following buildings may be able to be measured with some creativity, as long as certain data sets are removed to even out the comparison baselines:</p> <ul style="list-style-type: none"> • Library (Would need to separate parking garage data.) • City Hall (This was last measured through Energy Star at 60% and adjustments have been worked on.) • Recreation Center (Mechanism unknown.) • Police Department (Separate courthouse energy data.) <p>In addition, for facilities not able to be measured by EnergyStar, upgrades to enhance efficiency should also be explored. For example, last year Xcel replaced 677 cobra head streetlights with LED, leaving 1,200 non-cobra head streetlights which could either be replaced or decommissioned, depending on the situation. This project does not directly address this or any other strategy included in the SAP, but could be added as an additional strategy to reduce energy usage in City facilities going forward.</p>	<ul style="list-style-type: none"> • Develop strategy and costs for the remaining non-cobra head streetlights, evaluating potential upgrade to LED or the decommissioning of certain lights.
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8	CE-IT2S2: Expand solar and renewable energy purchases for City buildings	<p>The City currently has 1178 kW of solar capacity online to use at the City's municipal facilities, with another 1000 kW purchased that is not yet functional. When that solar array comes online at or around the end of 2017, the resulting 2.178 MW is expected to enable the City to source over 50% of its municipal electric demand with renewable energy.</p> <p>The City is in the beginning stages of exploring the possibility of further alternative energy sources. This may or may not include "purchases". Until the most recent purchases come online and we can determine what eligible metered electricity we have left, however, it is not possible to make a useful comparison between available renewable avenues for the remainder of the City's energy needs.</p> <p>Going forward, the City has several potential options to offset its remaining energy needs to renewable sources:</p> <ol style="list-style-type: none"> 1) Upcoming Renewable Connect Program through Xcel: Xcel is preparing to roll out a large solar campaign for residential and commercial in 2018. The idea is mostly familiar - the customer would buy in at a set rate for X years, but the customer would also get the Renewable Energy Credits (RECs) and deal directly with Xcel, rather than with a third party. Like Xcel's wind source program, the rate would be slightly higher than the existing rate/watt, but it would be set, hopefully offsetting inflation expectations at some level. Details are in process of being determined and are not yet set. The customer would tap into an enormous solar pool that Xcel would construct at a remote location. 2) Solar garden in Louisville for municipal / residential use: Early conversations with a nonprofit solar garden company would not only offer the City another opportunity to further offset its own energy load, but would also allow low income residents an opportunity to participate in solar credits at a significantly reduced monthly energy cost. The challenges are: availability of city land, length of time to develop, ROI after staff time and current market conditions are considered. 3) Solar garden offsite for municipal use only: Early conversations with a for-profit company indicates that solar capacity would be available within 12 months, should the City wish to make an agreement for another 	<ul style="list-style-type: none"> • Explore and compare opportunities to transition some or all of the remaining 50% of municipal facilities' energy needs to renewable sources, as appropriate.
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		<p>agreement similar to the current Power Purchase Agreements in place. The challenge is ROI after staff time and current market conditions are considered, as well as the availability of eligible metered energy.</p> <p>4) Wind power: Considering the City has already offloaded most if not all of its peak energy use to solar (soon to be up to 50%), it may be as or more cost effective to elect wind source for some or all of the remaining facility energy needs. This would allow the City to quickly transition the rest of its energy source to renewables. While it would cost a little more per watt than what the City currently pays, it may have a long-term ROI comparable to the solar agreements without utilizing and stretching staff resources.</p> <p>According to the Director of Public Works, we need to also be thinking in relation to renewables what our strategy is in the long term. He points out that while the City can claim a certain percent renewable now at certain cost due to current agreements, in 15-20 years those agreements run out. We will be left with solar equipment we own, but it is uncertain what their production efficiency will be and/or replacement costs. We may need to think in a larger scope about creating a “Sustainability Utility” that considers these costs and establishes a long term funding source and financial plan that can manage finances over a longer term view.</p>	
9	CE-IT2S3: Adopt building codes & policies that promote energy efficiency in new and existing buildings.	<p>According to the Planning and Building department, the City should evaluate whether the newer code versions provide energy efficiency benefits for new construction, and then evaluate whether we want to adopt them. New codes are available every three years and are next available for review in Jan/Feb 2018. This will initiate a review process, which will inform any case to the Board of Appeals.</p> <p>The Planning Department indicates that guidelines favoring energy efficiency could be included in the new Planned Unit Development (PUD) Guidelines.</p>	<ul style="list-style-type: none"> Guidelines favoring energy efficiency should be explored in the new Planned Unit Development (PUD) Guidelines as potential “waiver criteria”. Evaluate the adoption of updated building codes to the further advancement of energy efficiency in new buildings in early 2018.
10	CE-IT2S4: Aim to achieve 80% of all points within the Energy & Atmosphere section of the USGBC LEED for new City building construction.	<p>The new Recreation Center is on course to earn between 60-79 points (Gold Standard) under the Energy & Atmosphere section of the USGBC LEED rating system. Due to cost, however, the City will not seek formal certification.</p> <p>Interviews with the Planning Department revealed that the LEED system, while popular, may not be the ideal rating system, with suggestions that the Green</p>	<ul style="list-style-type: none"> Consider adopting a policy recognizing a suitable standard incorporating energy and water conservation (i.e. LEED Gold, Green Globe) for new construction of municipal buildings.

		<p>Globe system may be better suited to the City's needs. For the LEED system to be aspired toward as a City policy, this will require a more thorough discussion involving the Planning Department.</p> <p>Note: The LEED system is not based on percentages, but rather on a point system. Interviews reveal that the intention with the "80%" strategy was to represent a gold standard, which is earned through attaining 60-79 points.</p>	
11	CE-IT2S5: Perform energy audits of City facilities.	<p>The Facilities Manager has been regularly tracking the BTUs/ft2 since 2014 and has been making significant energy improvements as a result.</p> <p>Additionally, the Facilities Manager worked with Xcel in Fall 2016 to perform energy audits on City facilities with mixed results. He reports that they were not as thorough or as accurate as he had hoped they would be.</p> <p>Xcel is currently offering thorough building audits for \$7500/\$2500.</p>	<ul style="list-style-type: none"> Continue to quantify energy usage data annually by BTU/ft2, performing regular audits of municipal facilities, using data to inform strategy and costs for energy efficiency improvements.
External Target 1: Increase energy efficiency and renewable energy in commercial and residential sectors			
12	CE-ET1S1: Promote and use available EnergySmart efficiency services for residents.	<p>Boulder County's EnergySmart offers energy efficiency and renewable energy services and funding to residents and businesses to improve their bottom line. Current EnergySmart offerings include energy audits, solar rebates, energy efficiency discounts and low interest energy loans.</p> <p>As a municipality, the City of Louisville is not eligible to "use" EnergySmart services. Rather, the City acts as an outreach vehicle for EnergySmart services. The City of Louisville promotes EnergySmart efficiency services via the City website and other channels as appropriate, including the "Energy & Money" session of the Louisville Sustainability Series, a September water bill insert and a school kit insert sent home with the Xcel Energy Action Kit for 5th graders in October 2017. EnergySmart is an active partner to Louisville in Xcel Energy's Partners in Energy program and is additionally promoted by the City under the Louisville Energy Stars logo. Partners for a Clean Environment (PACE) also actively promotes EnergySmart through its Louisville business outreach, in coordination with the City. The Planning Department will also support outreach for EnergySmart services.</p>	<ul style="list-style-type: none"> Continue to work closely with Boulder County Sustainability office to promote available EnergySmart efficiency services to Louisville residents and businesses.
13	CE-ET1S2: Promote and use Partners for a Clean Environment (PACE)	<p>The City actively promotes Boulder County affiliated Partners for a Clean Environment (PACE), whose services include "free expert advisor services, incentives and a certification program to help businesses measure and gain</p>	<ul style="list-style-type: none"> Continue to promote Partners for a Clean Environment (PACE) sustainability services (energy, water,

	sustainability services for businesses, and collaborate on a green business recognition program.	<p>recognition for their successful progress in energy, waste, water and transportation.” The City actively collaborates with PACE on the Green Business Recognition program. In 2017, the City and PACE included Louisville Elementary to promote the Green Business Recognition Program.</p> <p>In addition, PACE is an active partner to Louisville through Xcel Energy’s Partners in Energy program.</p>	transportation, & waste) for businesses, and to collaborate on the Green Business Recognition Program.
14	CE-ET1S3: Provide and develop information for residents and businesses on conservation and rebate programs.	<p>The City has significantly stepped up its promotion of energy conservation and rebate programs, most notably as of May 2016 when the City of Louisville signed a Memorandum of Understanding to participate in Xcel Energy's Partners in Energy offering for two years. Through a facilitated engagement process in partnership with Xcel Energy, the City developed the Louisville Energy Action Plan, as well as the Louisville Energy Stars brand for programs that promote energy efficiency and support the City’s Sustainability Action Plan. As an outcome of this plan, the City's goal is to reduce total energy use by 1% annually, which could result in reducing total energy use by 11% over the 2015 baseline by 2027. Conservation and rebate programs that accomplish the City’s goals developed in the Louisville Energy Action Plan are advertised under the Louisville Energy Stars logo.</p> <p>The City of Louisville's Energy Stars program developed in partnership with Xcel Energy's Partners in Energy encourages energy efficiency and renewable energy, leverages resources and benefits the economic vitality, environmental health and well-being of the community through the following strategies:</p> <ul style="list-style-type: none"> • Large Business Outreach • Grow the Green Business Program • Increase Residential Participation in Priority Areas • City Showcase - Integrate Energy Efficiency in City Facilities • City Showcase - Share Information <p>Conservation and rebate programs are promoted on the website, in newsletters and other outreach materials, as well as through outreach sessions, such as the Louisville Sustainability Series and the CTC Building Owners Association December meeting. EnergySmart and PACE services play a key role in the strategy, among others. The Planning & Building Department also makes outreach materials available.</p>	<ul style="list-style-type: none"> • Continue to promote and develop information under the Energy Stars logo for residents and businesses on conservation and rebate programs for energy efficiency and renewable energy.

15	ET1S4: Adopt building codes & policies that promote energy efficiency in new and existing buildings.	This strategy seems to duplicate strategy IT2S3 above.	<ul style="list-style-type: none"> No recommended Action. Strategy is covered under strategy IT2S3.
16	ET1S5: Support utility demand-side management programs and renewable power supply initiatives.	<p>Working as a partner with Xcel Energy in Xcel Energy's Partners in Energy Program, the City is actively promoting Demand-side Management (DSM) programs and renewable initiatives through web outreach, water bill inserts and community sessions. For example, the Louisville Sustainability Series Session #1 (September 2017) was on the topic of "Energy & Money." Both the presentation and links to resources have been published on the City's website. In addition, the City collaborated with the City of Lafayette to host a free 3-hour solar workshop on October 21, 2017. The City also promotes renewable power source initiatives through Boulder County's EnergySmart.</p> <p>The City could further develop its promotion of renewable power source initiatives through a SolSmart Designation from the Department of Energy. SolSmart provides recognition and no-cost technical assistance to help local governments remove barriers to solar energy growth, such as through streamlining permit processes for homes and businesses, among other avenues. Currently, neighboring Lafayette is a SolSmart community and would be an excellent resource for initiating this process.</p>	<ul style="list-style-type: none"> Consider making Louisville a SolSmart community.
17	ET1S6: Promote low-interest financing for residents and businesses to complete energy efficiency upgrades & install renewable energy.	The City is currently promoting EnergySmart's low interest energy loan program in conjunction with Elevations Credit Union on the website and through outreach materials, such as the water bill insert in September 2017. This was also promoted through the Louisville Sustainability Series Session #1: Energy & Money focused on energy savings held at the Library.	<ul style="list-style-type: none"> No recommended action. Strategy is covered under ET1S1 and is recommended for removal.

Water

Internal Target 1: Reduce water usage and improve efficiency of water use with City buildings			
18	W-IT1S1: Benchmark all City buildings' indoor water use.	The Finance department has provided the Public Works Department indoor water use information for all City buildings for the past three years. Public Works regularly monitors usage.	<ul style="list-style-type: none"> Continue to benchmark all City buildings indoor water use, using data to inform plans for conservation and/or infrastructure replacements.

19	W-IT1S2: Replace or retrofit City building plumbing fixtures to meet or exceed current code requirements.	Over the past few years, the Public Works Department has worked hard to replace or retrofit City plumbing fixtures. For example, aerator devices have been installed on City building faucets to reduce water usage and most (if not all) toilets already are 1.6 gallons. Recently, several urinals at the library were replaced for 1/8 gallon flushes. It should be noted that there are still replacements to be made, but this is ongoing, as is appropriate, needed, and within budget. According to the Facilities Manager, an audit would be required and could be reasonably accomplished to determine a more thorough replacement schedule.	<ul style="list-style-type: none"> Perform an audit on City building plumbing fixtures and determine what replacements may be made to meet or exceed current code.
20	W-IT1S3: Achieve 80% of all the new construction water efficiency points in the USGBC LEED for water use reduction and rain water management, applicable to specific type of building.	<p>The new Recreation Center is being designed to earn between 60-79 points (gold standard) under the Water Use Reduction & Rain Water Management section of the USGBC LEED rating system. Due to cost, however, the City will not seek formal certification. The efficiency measures are expected to yield significant water usage savings over the life of the building, which would affect water production costs by the City.</p> <p>See CE-IT2S4 about potentially creating a City policy to address environmental standards for new City building construction.</p>	<ul style="list-style-type: none"> No recommended action. See CE-IT2S4.
21	W-IT1S4: Manage and upgrade infrastructure to reduce leaks in the system.	The Public Works Department habitually checks for leaks in the metering system, performing an audit annually on a different third of the system. This year, they will be performing a regularly scheduled complete audit. Known leaks are addressed within 24 hours. Leaks are costly and usually noticeable, often causing larger infrastructure problems (i.e. sinkholes in pavement). There are currently no known leaks in the system.	<ul style="list-style-type: none"> Continue to audit, manage and upgrade infrastructure to reduce leaks in the water metering system.
Internal Target 2: Improve efficiency of water use on Open Space and City landscaping			
22	W-IT2S1: Create a community-wide green infrastructure plan to capture and infiltrate rain water where it falls, thus reducing storm water runoff.	This requires a planning process as part of a Stormwater Master Plan. According to one member of the LSAB, this strategy is “complicated due to ‘rain barrel’ laws in Colorado. The goal with this strategy would be to promote less stormwater runoff directly from pavement to the streams (thus reducing pollution in stormwater) and to have areas designed with plant selection and drainage to allow for reduced irrigation. Rather than treating stormwater as a nuisance that needs to be directed away from City properties or new developments, some water would be put to use or allowed to infiltrate.” Interviews with Public Works reveal that a Stormwater Master Plan is on the horizon. Unknown funding required at this time. \$150-300K could potentially be largely funded (75%) through a Community Development Block Grant (CDBG).	<ul style="list-style-type: none"> Plans for a Stormwater Master Plan should be further developed, including a timeline and potential funding source. The desire to create a community-wide green infrastructure plan to capture and infiltrate rain water should be bookmarked for discussion for incorporation.

23	W-IT2S2: Encourage quality drought resistant landscaping through the development review process.	<p>According to the Parks and Recreation Department, the City utilizes xeric and low water plant material where feasible and/or desired. There is a horticulturalist on staff and additional support staff that keeps up the plant material around town. This horticulturalist is consulted on new-build projects as part of the process.</p> <p>In addition, the Planning and Building Department states that it plans to include language encouraging quality drought resistant landscaping in the new design guidelines.</p>	<ul style="list-style-type: none"> Encourage language for encouraging quality drought resistant landscaping should be included in the new Design Guidelines.
Internal Target 3: Minimize use of treated water for non-potable functions			
24	W-IT3S1: Use non-drinking water systems to meet residential, industrial, and agricultural needs when feasible.	The City uses the raw water it can through water rights, as well as re-use water, to irrigate the golf course, the sports complex, Community Park, etc. This is because these locations lie along current pipelines designated for reuse water. There has been discussion and some planning for expanding the use of re-use water system to other areas such as Heritage Park and Miners Park but this would involve a large infrastructure build-out.	<ul style="list-style-type: none"> Consider expanding re-use water system (i.e. Heritage Park, Miners Park).
Internal Target 4: Improve and maintain water quality			
25	W-IT4S1: Continue to update equipment and procedure manuals related to water use, wastewater and storm water treatment and incorporate methods to promote sustainability & limit environmental impacts.	The Wastewater treatment plant has been fully replaced and procedures streamlined. Updating equipment and procedures in general is an ongoing process in response to noted inefficiencies, as audits are regularly performed.	<ul style="list-style-type: none"> Continue to update equipment and procedures to promote sustainability & limit environmental impacts.
26	W-IT4S2: Aim to have Coal Creek removed from State's list of impaired or polluted waters.	It is believed that most of the pollution in the creek is caused from agricultural/raw water runoff. The desire and plan to remove Coal Creek from the State's list of impaired or polluted waters should therefore be included in a Stormwater Master Plan.	<ul style="list-style-type: none"> The desire to remove Coal Creek from the list of polluted waters should be added to the future Stormwater Master Plan.
External Target 1: Expand water conservation education for City residents and businesses			
27	W-ET1S1: Conduct a gap analysis of the water	While a number of resources exist on the City's website, a gap analysis could be developed to better identify gaps to help inform outreach initiatives.	<ul style="list-style-type: none"> Conduct a gap analysis for community resources for water

	efficiency tools, resources and incentives for residents and businesses.		efficiency tools, to be maintained annually to identify gaps and inform local outreach initiatives.
28	W-ET1S2: Promote and continue to use local water quality programs including: Keep it Clean; Boulder Area Sustainability Information Network (BASIN); PACE; Center for ReSource Conservation; Slow the Flow; and EnergySmart.	<p>The City and LSAB have worked together to ensure that relevant programs that promote water conservation and water quality are promoted via the City's website. Water bill inserts are another great method of outreach to the community and should continue to be used to offer resources to water customers.</p> <p>EnergySmart does not promote water quality or conservation and should be removed from this strategy.</p>	<ul style="list-style-type: none"> Continue to promote local water conservation and water quality programs to Louisville residents and businesses on the City's website, via community alerts, through the City's water bill inserts and any other appropriate channel.
29	W-ET1S3: Develop, market to the community, and update Louisville specific plans that address water conservation and quality.	As part of the Louisville Sustainability Series, the City hosted a community outreach session November 2017 to address Louisville specific plans for water conservation and quality. See W-ET1S2 for more.	<ul style="list-style-type: none"> No recommended action.

Transportation

	Internal Target 1: Develop balanced system that serves the entire City.		
30	T-IT1S1: Adopt Transportation Master Plan that identifies alternative means so citizens of all ages can safely and comfortably walk or ride a bike.	A meeting was held in July 2017 to determine the timeframe and feasibility of a Transportation Master Plan. It was determined that it should ideally begin in early 2018. Funding is needed. (\$50,000 - \$100,000)	<ul style="list-style-type: none"> Develop a Transportation Master Plan to define and analyze transportation priorities. The identification of alternative modes of transportation, including multi-modal access points, should be considered in the future Transportation Master Plan.

31	<p>T-IT1S2: Invest in bicycle, pedestrian and transit options, which provide safe, pleasant non-vehicle means of accessing schools, commercial areas, recreational facilities and municipal locations.</p>	<p>According to one member of LSAB, the primary goal of this strategy is to reduce the number of miles driven and reduce fossil fuel use; resulting in a reduction in SOV and GHG emissions in the city.</p> <p>The secondary goal is to encourage citizens to walk or bike to promote a healthy lifestyle.</p> <p>To achieve those goals, LSAB's intention is for creation of further Transit Pathways to mass transit connectors, commerce areas, schools, and city facilities (rec center library, etc.) through a network of bike only lanes and enhanced street design (wide sidewalks, traffic quieted streets, trees, etc.). The Transit Pathway system was envisioned to be separate, but complimentary, to the Louisville's existing recreational trails as it would serve a distinctly different purpose.</p> <p>To be successful, this strategy requires committed support from the Planning Department and City Council to ensure that Transit Path development is given weight during development/renovation projects. It also requires input and support from Public Works for installation of a safe network of Transit Paths on city streets, paths and enhanced street design.</p> <p>In addition, many walking and cycling routes are currently in place (32 miles of cycling paths within City boundaries), with planned improvements. Also:</p> <ul style="list-style-type: none"> • There are two new underpass projects planned or in progress, and one complete in October 2017. • A bike cage is being installed at the Highway 36 overpass. • A preliminary First and Final Mile study has been initiated. <p>Other supportive projects in progress or desired include:</p> <ul style="list-style-type: none"> • Commuting Solutions is developing sponsors for Bike Share, a public, intercommunity bicycle system in which bicycles are made available for shared use to individuals on a short-term basis for a price. It is unknown at this time whether the City will be requested to play a role in the development of sponsors. • Boulder County currently provides bike racks free of charge for businesses. 	<ul style="list-style-type: none"> • The desire to further develop transit pathways should be considered in the future Transportation Master Plan.
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		<ul style="list-style-type: none"> The Library director reports that they would be interested in exploring the possibility of installing a bike repair station outside the library. <p>A future Transportation Master Plan will allow for a more thorough study of outstanding needs, desires and feasibility of transportation priorities, including transit pathways. Recommendations are included under strategy T-IT1S1.</p>	
	Internal Target 2: Reduce SOV and GHG emissions and cost impact for City staff		
32	T-IT2S1: Offer incentives to City Staff such as: bus / carpool / vanpool subsidies, Bike-to-Work incentives, bike parking and shower facilities.	<p>Currently, there is bike parking at the City Hall. In addition, one shower exists in City Hall, with more at the Recreational Center, but not in other facilities. Interviews with City Hall staff who utilize the City Hall shower, however, state that it is “not welcoming or inviting” as the room shares a space with paint supplies. A renovation of this room would be a welcome incentive.</p> <p>Preliminary conversations with Human Resources staff indicate it may be possible to add bike-to-work in the Employee Wellness program. To implement this, it will be important to take into account staff members who live in areas where alternative modes of transportation are not reasonable, and to be inclusive of people with differing mobilities. Therefore, this would need to be one of multiple alternatives eligible for incentives.</p> <p>Other incentives could include the provision of an EcoPass or pre-loaded MyRide cards to employees. It should be noted that EcoPasses were offered by the City to staff in the past, but the service was discontinued due to low usage.</p> <p>Another important incentive to allow staff to reduce GHG emissions is to increase electric vehicle charging stations at city facilities. This increase is currently being planned by the City Manager’s Office and Public Works, with the next EVSE station planned for the new Recreation Center in early 2018. It may be possible to further incentivize staff to purchase alternative fuel vehicles privately, which could be incentivized for use on the job. This could encourage the reduction of vehicles in the City fleet. This should be considered for further study.</p>	<ul style="list-style-type: none"> Consider adding bike-to-work as an incentive in the Employee Wellness program. Determine if any City facilities require further bike racks and work with the County to procure. Develop a plan to upgrade and/or install shower facilities for City staff. Continue to investigate ways for the City to provide relevant or feasible transportation benefits. Consider developing a telecommuting policy for staff.

		<p>In addition, a telecommuting policy could be considered to help reduce GHG emissions for staff. An effective telecommuting policy has been shown to not only increase productivity of staff, but also health and wellness.</p> <p>Also, Louisville supported RTD's Ride the Bus campaign on September 28, 2017 by manning 4 Louisville bus stops with incentives. In addition, Boulder County provided a grant to preload 6,000 new MyRide pre-loaded bus passes to increase riders on the bus and to reduce single passenger vehicles on the road. Sign-up events were in July/August 2017 at the Library. This was offered both to residents and staff.</p>	
33	T-IT2S2: Develop transportation solutions with neighboring communities to establish efficient connections in regional transit.	<p>There are several recent and current projects that address this strategy:</p> <ul style="list-style-type: none"> • An E-bike ordinance was recently passed in 2017, allowing e-bikes on Louisville bike paths. E-bikes help riders attain farther distances with less effort, both within and between communities. • The Louisville Call-n-Ride program (RTD) allows residents to call for a ride between communities within Louisville, including service between the Louisville Recreation Center and Superior. • The RTD system allows for travel between communities. Further, the City Manager's Office is beginning to discuss a new route serving CTC with RTD. Also, RTD initiated a Ride the Bus campaign and Boulder County provided a grant in 2017 to advertise MyRide pre-loaded bus passes, both of which Louisville supported through staff, outreach, venue and funds. • A new bike shelter/cage is being installed on the Hwy 36 overpass to improve non-vehicle access to the bus stop and encourage transportation between communities. • Bike Share (Zagster) received funding in May 2017 for public inter-community bike share. It will need sponsors, but implementation is expected within 6-12 months. • In coordination with DRCOG, the City of Louisville and Town of Superior coordinated corridor timing improvements to reduce vehicle delay/idling/emissions. • In coordination with Superior, Louisville led the initiative to build the Diverging Diamond Intersection (DDI), which saved more 	<ul style="list-style-type: none"> • Continue to discuss with RTD new routes between neighboring communities (e.g. the CTC and beyond) to improve regional and local transit service. • Consider further needs for alternative transportation solutions between neighboring communities in the future Transportation Master Plan. • Continue to support the effort to move the FastTracks project forward.

		<p>delay/idling/emissions on the US 36 BRT route than the previous US 36 RTD Queue Jump project was achieving.</p> <ul style="list-style-type: none"> • In addition, Via offers transportation services between communities. <p>Additionally, FastTracks, the passenger train system that is currently operating for a short distance in Denver, will eventually be built out to Louisville and beyond (Longmont). It is not scheduled for implementation in Louisville, however, until 2040. This is an endeavor the City should continue to pursue and attempt to move through the legislative process more quickly on a state and federal level.</p> <p>Further needs for transportation solutions between communities may be more thoroughly investigated through the development of the future Transportation Master Plan.</p>	
	External Target 1: Support telecommunication efforts		
34	T-ET1S1: Support upgrading of communication infrastructure that would improve internet speeds.	<p>The Library reports that they have recently upgraded their wifi network (in 2017) by increasing internal access points. This is an important community outreach in that it allows people of all vulnerabilities to access the internet for free, thus leveling the playing field for education, telecommuting opportunities, and even learning through play. The City Hall also currently provides free wifi to the public it serves.</p> <p>In addition, City broadband was on the November 2017 ballot. This would potentially allow the City to procure broadband services or partner in a way that would allow the City to upgrade/streamline its municipal communication capacity. This is intended primarily for City use, but may include some opportunities to improve broadband to the public in public buildings. Council will be a part of this process if procurement of a new provider is necessary.</p>	<ul style="list-style-type: none"> • Continue improving City facilities' broadband capacity available to the public where relevant.
	External Target 2: Reduce SOV and GHG emissions		
35	T-ET2S1: Explore programs to fund and implement RTD EcoPass for City residents and employees.	<p>According to the Deputy City Manager, this has been utilized in the past for City staff and was discontinued due to lack of participation. In addition, a past study showed that many residents who needed EcoPasses for school or work already had them.</p> <p>In addition, Boulder County provided a grant in 2017 to preload 6,000 new MyRide pre-loaded bus passes to increase riders on the bus and to reduce</p>	<ul style="list-style-type: none"> • No new recommended action. See T-IT2S1.

		<p>single passenger vehicles on the road. This was offered both to residents and staff.</p> <p>See above (T-IT2S1) for further information.</p>	
36	T-ET2S2: Develop bike maps and way finding signage	<p>Boulder County released a 2017 Bike Map this year with detailed routes all over the county available for public use. Commuting Solutions, also, has a pocket map showing bike access points across four communities, including Louisville.</p> <p>Public Works/Transportation has indicated a willingness to develop a simple map for Louisville residents showing all non-vehicle access points within Louisville. They are currently developing an ADA parking map. No additional funding needs are expected.</p> <p>In addition, the Planning department has indicated that a plan to put Zagster bike stations between communities is in progress, but not yet funded. This would include additional way finding signage.</p> <p>A First and Final mile study was performed in 2017. Programs which could improve ease-of-use for first and final mile commuter pathways could include further development of a Louisville-specific multi-modal map, additional way finding signage, bike facilities, digital information screens at bus stops, etc.</p> <p>Further implementation of “First and Final Mile” connections will be considered as part of the Transportation Master Plan.</p>	<ul style="list-style-type: none"> Consider the development of a Louisville-specific map for residents showing all non-vehicle access points. Implementation of the First and Final Mile program should be added to the Transportation Master Plan.
37	T-ET2S3: Incentivize businesses to include electric vehicle charging stations.	<p>The Planning Department reported that businesses could be incentivized to build out for or provide electric vehicle supply equipment (EVSE) as potential “waiver” currency when negotiating for particular waivers (i.e. offsets). The addition of EVSE with new build projects could be added in a guideline list in the current PUD project.</p> <p>Additionally, Partners for a Clean Environment (PACE) currently can help businesses with advice and/or rebate options for implementing EVSE stations, but the City does not currently advertise this particular service from PACE on the website. Grants exist through the Regional Air Quality Council (RAQC) which help not-for-profit entities, such as local governments, school districts</p>	<ul style="list-style-type: none"> Add Electric Vehicle Supply Equipment (EVSE) build-out into a guideline list in the current Planned Unit Development (PUD) project. Continue to support State-led initiatives for more funding for charge corridor infrastructure, including within the municipality of Louisville.

		<p>and state agencies. Apartment/condominium complexes and businesses that own multi-vehicle parking facilities for fleet, public or guest / visitor are also eligible for EVSE funding. Local companies also exist that can help companies navigate rebates and the logistics of installing an EVSE.</p> <p>It should also be noted that the Mayor’s decision to join to Climate Mayors and to sign onto the letter to the Governor was a powerful statement of support from Louisville for building out EVSE infrastructure in Colorado, since this is one of the Governor’s commitments as a “Climate State.” This grassroots push from Mayors and the Governor is expected to have an effect on funding opportunities for municipalities from the State.</p>	
38	T-ET2S4: Promote and use PACE sustainability services for businesses, and collaborate on a green business recognition program.	<p>Over the last year, the City has promoted Partners for a Clean Environment (PACE) services via its website and through its Green Business Recognition program, in which PACE plays a key role. Affiliated with Boulder County, PACE also works through other organizations, such as Commuting Solutions, the CTC Building Owners Association and the Louisville Chamber of Commerce, to promote transportation options for Louisville businesses to reduce the number of single occupancy vehicles (SOV) on the road.</p> <p>The City currently promotes PACE for its business outreach services, which includes “free expert advisor services, incentives and a certification program to help businesses measure and gain recognition for their successful progress in energy, waste, water and transportation. PACE Partners are businesses committed to supporting a strong economy, implementing environmentally sustainable practices and becoming leaders in our community.” See CE-ET1S2.</p>	<ul style="list-style-type: none"> • No new recommendation. See CE-ET1S2.
External Target 2: Incorporate smart growth principles and walkable communities into land use			
39	T-ET3S1: Adopt programs to improve ease-of-use for the first and final mile of commuter pathways.	<p>A First and Final Mile study was initiated in 2017. Programs which could improve ease-of-use for first and final mile commuter pathways could include further development of a Louisville-specific multi-modal map, additional way finding signage, bike facilities, digital information screens at bus stops, etc.</p> <p>Any recommendations for this strategy overlap with recommendations for T-ET2S2.</p>	<ul style="list-style-type: none"> • No new recommended action. See T-ET2S2.

40	T-ET3S2: Improve walkability through crosswalks and safe school routes with BVSD partnerships.	Public Works reports that they work directly with BVSD whenever an issue arises. The Planning and Building Department reports that there is room for improvement and that the city needs to continually work with all stakeholders.	<ul style="list-style-type: none"> Continue to work directly with BVSD whenever an issue arises concerning crosswalks and safe school routes.
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Waste

	Reduce production and increase landfill diversion		
41	Ws-IT1S1: Expand recycling programs to include hard to recycle materials (e.g. electronics and pharmaceuticals)	<p>Currently, residents may take hard-to-recycle materials to the Boulder Center for Hard to Recycle Materials (CHaRM) for a fee.</p> <p>The City does not currently host a hard-to-recycle day for residents within Louisville. This is not a service that could be added as part of a contract with a residential hauler for door-to-door pick-ups, along with compost, recycling and waste. The City does, however, host an annual Spring Clean-Up. The collection of hard-to-recycle items would be an appropriate addition to the event.</p> <p>Additional funding would be required for this activity, likely between \$3K-\$5K per event. It is possible that this type of event could receive grant funding from the county (Zero Waste Grant / Sustainability Grant) or from the Colorado Department of Health and Environment (CDPHE) through a Recycling Grant, although these grants do not normally fund activities which would not become self-sustaining over time. It is likely funding would need to be from the City budget.</p> <p>The City also hosts two free branch collection days per month for woody debris only.</p>	<ul style="list-style-type: none"> <u>Determine whether the Louisville Spring Clean-Up could include the collection of Hard-to-Recycle items.</u> <u>Continue providing branch recycling and leaf drop-off services and restart metal recycling service.</u>
42	Ws-IT1S2: Install triple bin (recyclable, compostable, trash) waste collection at City facilities and parks as practical	<p>Most City facility buildings have at least one or more collections of triple bin waste bins. Parks, however, are limited. The Recreation Center's triple bin system is functional, but additional bins will be needed for the renovation. Restrooms in facilities may or may not compost. There is one public outdoor recycle bin in front of the City Hall.</p> <p>Louisville has 27 parks, few of which have recycle bins installed. Waste accumulated in City parks is collected by staff.</p>	<ul style="list-style-type: none"> An inventory should be taken of all parks and facilities to determine which facilities need bins for diversion (e.g. recycling or composting). An analysis of cost should be made, as well as expected challenges and recommendations.

		<p>In order to implement a 3-bin system at all facilities and parks, an analysis would need to be performed to determine suitable locations and logistics (i.e. cross-contamination and staffing challenges). For parks, for example, it may be more useful to include one or more recycling bins, and not include compost bins, due to the high rate of cross-contamination and failure at public parks for this type of service (If composting is contaminated by non-compostable materials, haulers will add it all to the waste stream so as not to contaminate the compost cycle.) Education through staff training is highly recommended to help ensure maximum participation and better success for the triple bins currently being used in City facilities.</p> <p>An interview with the Parks and Recreation Department revealed that one welcome way to divert a significant amount compostable materials from the park's waste stream is to explore a dog waste composting service at the City's dog park and/or open space. The Boulder County Sustainability Office has indicated that this would be within scope for a Zero Waste Grant.</p> <p>In addition, the Events Coordinator reports that composting facilities are lacking when hosting City events. While the waste collected is all compostable (utilizing compostable cups and utensils), there is not enough storage space in which to put the resulting compost waste. She suggests an upgrade to bin size (one or two 96 gallon rolling bins) in which to put event trash at City Services for later collection.</p>	<ul style="list-style-type: none"> • An additional 96-gallon rolling bin should be kept at City Services for the purpose of compost collection at the end of City-sponsored events.
43	Ws-IT1S3: Establish City purchasing guidelines that consider impact from product lifecycles.	<p>Establishing Green Purchasing Guidelines would be beneficial both financially and environmentally to City operations. Currently, Louisville City departments are free to order office supplies from their preferred office supplier, usually Source or Staples. Currently, much of the white copy and printer paper purchased by the City is 30% recycled content, but not all, depending on department. Many other office supplies purchases are not eco-friendly, even when an alternative exists at a competitive price.</p> <p>A recent analysis of office supplies purchased by the city from the two primary office supply companies reveal that done strategically, money could be saved through the replacement of non-recycled content products with recycled content products. This may be discussed more thoroughly when the policy is presented to council.</p>	<ul style="list-style-type: none"> • Adopt Green Purchasing Guidelines that promote the purchase of eco-friendly products when there is a choice and the selection is not cost-prohibitive. These guidelines would continue to favor local purchases over eco-friendly purchases. • Consider centralizing all purchases through one vendor to streamline eco-friendly product selection and to utilize competitive pricing by setting up contract items. If centralizing through one vendor is not desirable

		<p>Regardless, a more fundamental campaign is needed beyond the replacement of supplies to their more sustainable counterparts to actually reduce the use of paper. This would include a staff-wide cultural shift to utilize digital tools as much as possible, instead of paper. Examples of policies to encourage this shift could include the development of guidelines to not print onto paper items that may be read digitally and for staff to bring laptops or tablets to meetings, rather than to expect printouts, to use double sided printing when printing is necessary, or to transition to a managed print service.</p> <p>Interviews with the various departments suggest that certain measures are in progress toward a digital shift. The Finance and IT Departments are developing a new ERP in order to prevent the need to print certain items that are needed by the Finance Department.</p> <p>The IT Department reports it has decommissioned more than half of the large copiers the City had in the last 4 years, and replaced existing copiers with far more efficient, energy smart versions.</p> <p>The Planning and Building Department, also, has begun to make a shift toward digital documents through the implementation of a new software review system.</p> <p>Even so, the IT Department says their new ERP will not solve all needs to print and return for scanning and the Planning and Building Department has expressed a strong desire to digitize far beyond what is currently in place. The Human Resources department, as well, has expressed a desire to provide tablets for interviewers during the interview process, rather than the provision of large paper packets, but do not currently have available tablets for this purpose.</p> <p>The systemic reduction of paper use across departments would very likely reduce copier/printer equipment needs significantly, providing further savings and offsets for any additional purchase of devices such as tablets or digital meeting aids, such as Smart TVs.</p>	<p>or possible, then continue current relationships, applying a Green Purchasing Policy to purchase decisions.</p> <ul style="list-style-type: none"> Develop a plan to shift City staff culture toward digital document usage and managed print services.
	External - Develop educational programs to reduce business & residential waste		
44	Ws-ET1S1: Partner with local retailers to reduce use of non-recyclable, non-	<p>The City currently strongly encourages that all food containers used at Street Fair and City sponsored events by participating retailers are compostable.</p>	<ul style="list-style-type: none"> Consider a campaign to encourage Louisville residents to use reusable

	compostable, and non-reusable containers.	<p>One significant way to address this strategy would be a potential partnership between the City and grocers and/or retailers to address plastic bag usage. The City could consider a campaign to recommend or encourage grocers and/or retailers to adopt a “bring your own bag” system, or to provide only paper bags for customers, which are both biodegradable and much more easily recyclable.</p> <p>Looking to the future, the City may want to evaluate an ordinance mandating use of a “bag fee” by grocers and/or retailers to encourage customers to bring their own bags. These systems have proven highly successful in many cities around the nation to reduce landfill waste generated by retail bags. Louisville’s neighbor, the City of Boulder, has created a bag fee mandate in grocery stores. The program has become well accepted, with shoppers sometimes even encouraged to donate their bag fee to a charity when not used. Reports show that bag usage in grocery stores has dropped by 69%. Retailers like the fee because it allows them to capture revenue for bag usage. For example, the way the bag fee works in Boulder is that all grocery stores are required to charge 10 cents for every plastic or paper bag used at the checkout. The stores retain four cents of the fee and the remaining six cents is sent to the City of Boulder to address the impacts of disposable bags in the community.</p> <p>In addition, the City of Louisville currently does not require retailers – or any businesses – to recycle and compost, despite a requirement for residents to do so. To require businesses to recycle and compost would require an ordinance. This could potentially be done while still empowering the business to choose their own hauler. In the past, the City Council has not agreed to make this mandatory for businesses.</p> <p>The City will be renegotiating its waste contract and issuing an RFP for renewal of the waste contract in 2019. These additional topics will not be addressed by this contract, but they would be appropriate to revisit together in mid-to-late 2018.</p>	<p>bags for shopping.</p> <ul style="list-style-type: none"> Consider an ordinance to require all Louisville businesses to recycle and compost, using the licensed hauler of their choice. Consider <u>Requiring</u> all retailers participating in City events to use compostable food service products <u>for events with over 50 attendees</u>.
45	Ws-ET1S2: Increase awareness through City's online sources regarding options for hard to recycle materials.	CHaRM information may be easily found on the City’s Sustainability web pages.	<ul style="list-style-type: none"> No recommended action.

46	Ws-ET1S3: Encourage Homeowner Associations (HOAs) to offer the same level of waste services (e.g. compost) as the community.	<p>The City of Louisville currently does not require Home Owner's Associations (HOAs) to recycle and compost, despite a requirement for its residents to do so. Unlike other residents, HOAs currently offer waste services with their own selected haulers. While not required, Louisville HOAs currently offer recycling services, but not necessarily composting services. Further, haulers are not currently required to report collection weights, which does not allow the City to capture diversion amounts. The County has created a system, however, in which haulers could participate, and would allow for the collection of this information.</p> <p>To require HOAs to recycle and compost would require an ordinance. This could potentially be done while still empowering the HOA to choose their own licensed hauler with pay-as-you-throw pricing. In the past, the City Council has not agreed to make this mandatory for HOAs. It is possible that this could be reevaluated.</p> <p>It is noteworthy that this project would directly and potentially significantly impact GHG emissions recorded in Louisville's annual GHG inventory. Rates of diversion factor into these calculations.</p> <p>The City will be renegotiating its own residential (non-HOA) waste contract and issuing an RFP in late 2018 for renewal in 2019. While the potential requirement of an HOA to provide both composting and recycling is not be addressed by this contract, it might be an appropriate issue to revisit with the City Council in mid-to-late 2018 while similar topics are being raised.</p>	<ul style="list-style-type: none"> Consider an ordinance to require all haulers collecting recyclables and compost to report weights annually to the City of Louisville. Consider a study session and potential ordinance to require all Louisville HOAs to offer recycling and composting along with their trash service, using the hauler of their choice.
47	Ws-ET1S4: Promote and use PACE sustainability services for businesses, and collaborate on a green business recognition program.	Over the last year, the City has promoted Partners for a Clean Environment (PACE) services via its website and through its Green Business Recognition program, in which PACE plays a key role. Please see CE-ET1S2 for more.	<ul style="list-style-type: none"> No new recommendation. Please see CE-ET1S2.
External - Adopt financial incentives for waste reduction by residents & businesses			
48	Ws-ET2S1: Promote recyclable substitutes/replacements for single use throw-away items, such as plastic bags, foam	The City has worked to promote substitutes for single use items in 2017 through giveaways promoted at City events, including the Bus to Work Day and the Louisville Sustainability Series. Items given away for free to the public include stainless steel water bottles and reusable shopping bags.	<ul style="list-style-type: none"> Inventory parks for functional drinking water fountains and plan for repairs or upgrades, accordingly.

	clamshell food containers, disposable plastic water bottles, etc.	<p>In addition, the City should make every effort to not inadvertently cause residents to use single-use items. For example, a resident recently reported to the LSAB that a water fountain in a city park was not functional. He also reported that the bin next to the fountain was a waste can (landfill destined) overflowing with plastic water bottles. It is possible that upgrading fountains may have a mitigating impact on this waste stream.</p> <p>An interview with the Parks and Rec Director revealed that many of the drinking fountain issues are more related to water pressure than with broken fountains. Even so, many of the city's fountains are aging and could use replacement. This would require an investigation into necessity and budget by the Parks and Rec Department.</p>	
49	Ws-ET2S2: Promote markets for Citywide generated recyclables and compost.	<p>Currently, Western Disposal offers free compost to its compost customers at a designated time in the year. In addition, the City offers wood chip mulch, although it has been stated that the mulch is chipped too large for some projects. The City could further the promotion of these offerings by further use of the City website, e-Notifications, etc.</p> <p>Additionally, the City requires residents (non-HOA) to recycle, which contributes to the recycling industry's 85,000 jobs in Colorado.</p>	<ul style="list-style-type: none"> • Further promote the giving away of free compost and wood chip mulch for community use through City marketing avenues. • The City should determine whether it is possible to chip wood mulch smaller for increased use by residents.
50	Ws-ET2S3: Encourage use of County Hazardous Materials Management Facility (HMMF) through the no-copay program.	<p>Residents of Louisville may currently take hazardous materials to the Hazardous Materials Management Facility (HMMF) free at drop off. This is a service the City of Louisville supports through utility bill fees (\$30K per year) and is well-utilized with 1,356 drop-offs (46 tons of hazardous waste) by Louisville residents in 2016. Fifty-two tons of hazardous waste were dropped off at the HMMF by Louisville residents in 2015.</p> <p>This service is currently promoted via the City website. This diversion effort factors into a reduction of GHG emissions by the community.</p>	<ul style="list-style-type: none"> • Continue to promote residential use of the Boulder County Hazardous Materials Management Facility (HMMF).
	External - Divert commercial waste disposal		
51	Ws-ET3S1: Support commercial food composting.	The City currently strongly encourages that all food containers and leftover food used at City sponsored events (including Street Faire) by participating retailers be composted.	<ul style="list-style-type: none"> • Consider inclusion of "room for composting" requirement and/or incentives in the new Design

		<p>The City of Louisville currently does not require businesses to use compost or recycle services, despite a requirement for residents (non-HOA) to do so. See Ws-ET1S1 for more.</p> <p>The Planning and Building Department has expressed a desire to place a “Room to Compost” requirement and/or incentives in the new Design Guidelines in order to encourage commercial and multi-family building development to plan for recycling access. This requirement for recycling is currently in the zoning code (LMC 17.16.265).</p>	Guidelines and new future building codes.
52	Ws-ET3S2: Provide free waste audits for businesses and support zero waste implementation by promoting PACE.	<p>The City does not have capacity to provide free waste audits for businesses. The City of Louisville currently does promote PACE, however, which provides waste audits for businesses. See Ws-ET1S4 for more.</p>	<ul style="list-style-type: none"> No recommended action.

Local Food and Agriculture

	Develop system of City supported community gardens		
53	L-IT1S1: Encourage additional community garden locations throughout Louisville.	<p>One member of the LSAB reports the following: In 2016 Council requested that LSAB investigate the feasibility of a second community garden. It was suggested that the garden location serve the new South Boulder Road high-density housing developments. In a subsequent meeting between LSAB and the Planning Department it was revealed that no City-owned public use land or green spaces had been included in those developments.</p> <p>For the new, existing Community Garden, there were approximately 20 general inquiries on obtaining a plot for the 2017 season. All plots were rented in 2017 and the existing garden has a wait list for the 2018 season. For the 2017 season, the number of people impacted by the garden directly was approximately 80. As many gardeners donate surplus produce to food banks, an additional number of people benefited from the garden indirectly. The impact on the community is also felt in the public events the garden sponsors: Music in the Garden, Kids Night in the Garden, The Harvest Festival. These activities are attended by non-gardening members of the community.</p>	<ul style="list-style-type: none"> Continue to work with local resident led groups to enable community gardens, if desired. Determine a process to give suitable weight to public green spaces during development and renovation projects.

		<p>If suitable land is made available, additional gardens are certainly feasible. Denver Urban Gardens has agreed to sponsor a second garden in Louisville. The current Garden Leaders have expressed a willingness to mentor the Leaders of a second garden.</p> <p>City staff does not currently have capacity to lead the effort toward additional gardens. To accomplish the 2015 Community Garden project, LSAB and a group of residents led the charge, enlisting a non-profit group for management.</p> <p>Any new community garden location would be dependent on a variety of issues, most notably access to water. The Parks and Recreation Director has indicated that he would be supportive of additional community garden locations.</p> <p>If the LSAB or a resident group desires to take charge, however, it seems the City would be open to supporting.</p>	
54	L-IT1S2: Conduct workshops for community gardening	The Community Garden holds a workshop pre-growing season on community gardening. Additionally, the City could potentially facilitate a workshop on community gardening through the Sustainability Series.	<ul style="list-style-type: none"> Continue Sustainability Series to educate the public and consider including new topics such as community gardens, composting and the green business program.
External - Develop citizen based food sales program			
55	L-ET1S1: Allow citizens to sell locally produced items such as eggs, honey and produce.	Citizens may currently sell locally produced items at an appropriate venue under Cottage Food Law, with an automatic exemption from the Colorado Retail Food Protection Act. As a private entity, the Farmer's Market in Louisville, for example, allows for these types of sales at their own discretion, requiring only a business license and insurance for sales of raw agricultural products. To do more, the City could adapt zoning regulations that would allow vendors more flexible sales of locally produced goods, such as from their own lots.	<ul style="list-style-type: none"> The City should consider adapting zoning regulations to allow vendors more flexible sales of locally produced goods, such as the ability to sell from one's own lot.
56	L-ET1S2: Provide resource information about local food economy.	There is a list of resource links for the Louisville Farmer's Market, local CSAs, the Community Garden, etc. on the City of Louisville website, on the Sustainability page.	<ul style="list-style-type: none"> No recommended action.

57	L-ET1S3: Track community supported agriculture participation.	Community Supported Agriculture (CSA) information may be found on the Louisville website, on the Sustainability page. CSAs are private businesses. The City, therefore, has no mechanism, ability, or jurisdiction to track community participation in any CSA.	<ul style="list-style-type: none">• No recommended action.

Appendix B: Progress of 2016 Sustainability Action Plan Strategies

The following chart displays an estimate of progress made on the 57 strategies listed in the Sustainability Action Plan since the SAP's publication in November 2016.

Progress Summary:

- 28% of the strategies have made High Progress (4)
- 33% of the strategies have made Partial Progress (3)
- 23% of the strategies have made Low Progress (2)
- 16% of the strategies have made No Progress (1)

Progress Scale:

- (4) **High Progress** – Strategy has been met and/or is ongoing
 (3) **Partial Progress** – Strategy is in advanced stages
 (2) **Low Progress** – Strategy is in beginning stages
 (1) **No Progress** – No planning or action to date

Note that the strategies appear as they appeared in the 2016 Sustainability Action Plan, as approved by Council. Recommendations for edits to the strategies directly will be provided to the LSAB for consideration in a future revision of the Louisville Sustainability Action Plan.

		High Progress	Partial Progress	Low Progress	No Progress
Climate & Energy					
1	Update inventory of greenhouse gas (GHG) production	☐			
2	Set new goals for GHG reductions	☐			
3	Purchase lowest fuel use vehicles practical for the City fleet			☐	
4	Develop conversion plans for City vehicle fleet to implement new vehicle technologies as they become available for testing and use		☐		
5	Implement controls and policies to limit idling of City vehicles				☐
6	Install LED traffic signals	☐			
7	Aim for all eligible existing City buildings be benchmarked using the ENERGY STAR performance standards. For ENERGY STAR eligible buildings, a strategy and costs will be developed for energy efficiency improvements.		☐		
8	Expand solar and renewable energy purchases for City buildings		☐		
9	Adopt building codes & policies that promote energy efficiency in new and existing buildings			☐	
10	Aim to achieve 80% of all points within the Energy and Atmosphere section of the USGBC LEED for new building construction		☐		

11	Perform energy audits of City facilities	<input type="checkbox"/>			
12	Promote and use available county EnergySmart efficiency services for residents	<input type="checkbox"/>			
13	Promote and use Partners for a Clean Environment (PACE) sustainability services for businesses, and collaborate on a green business recognition program.	<input type="checkbox"/>			
14	Provide and develop information for residents and businesses on conservation and rebate programs	<input type="checkbox"/>			
15	Adopt building codes & policies that promote energy efficiency in new and existing buildings			<input type="checkbox"/>	
16	Support utility demand-side management programs and renewable power supply initiatives		<input type="checkbox"/>		
17	Promote low-interest financing for residents and businesses to complete energy efficiency upgrades and install renewable energy	<input type="checkbox"/>			
Water					
18	Benchmark all City buildings' indoor water use	<input type="checkbox"/>			
19	Replace or retrofit city building plumbing fixtures to meet or exceed current code requirements		<input type="checkbox"/>		
20	Achieve 80% of all the new construction water efficiency points in the USGBC LEED for water use reduction and rain water management, applicable to specific type of building		<input type="checkbox"/>		
21	Manage and upgrade infrastructure to reduce leaks in the system	<input type="checkbox"/>			
22	Create a community-wide green infrastructure plan to capture and infiltrate rain water where it falls, thus reducing storm water runoff				<input type="checkbox"/>
23	Encourage quality drought resistant landscaping through the development review process		<input type="checkbox"/>		
24	Use non-drinking water to meet residential, industrial, and agricultural needs when feasible		<input type="checkbox"/>		
25	Continue to update equipment and procedures manuals related to water use, wastewater and storm water treatment and incorporate methods to promote sustainability & limit environmental impacts		<input type="checkbox"/>		
26	Aim to have Coal Creek removed from state's list of impaired or polluted waters				<input type="checkbox"/>
27	Conduct a gap analysis of the water efficiency tools, resources and incentives for residents and businesses				<input type="checkbox"/>
28	Promote and continue to use local water quality programs including: Keep it Clean; Boulder Area Sustainability Information Network (BASIN); Partners for a Clean Environment (PACE); Center for ReSource Conservation, Slow the Flow; and EnergySmart	<input type="checkbox"/>			
29	Develop, market to the community, and update Louisville-specific plans that address water conservation and quality		<input type="checkbox"/>		
Transportation					
30	Adopt Transportation Master Plan that identifies alternative means so citizens of all ages can safely and comfortably walk or ride a bike				<input type="checkbox"/>
31	Invest in bicycle, pedestrian and transit options which provide safe, pleasant non-vehicle means of accessing schools, commercial areas, recreational facilities and municipal locations		<input type="checkbox"/>		
32	Offer incentives to City Staff such as: bus/carpool/vanpool subsidies, Bike-to-Work incentives, bike parking and shower facilities			<input type="checkbox"/>	
33	Develop transportation solutions with neighboring communities to establish efficient connections in regional transit		<input type="checkbox"/>		
34	Support upgrading of communication infrastructure that would improve internet speeds		<input type="checkbox"/>		
35	Explore programs to fund and implement RTD EcoPass for City residents and employees			<input type="checkbox"/>	

36	Develop bike maps and way finding signage			□	
37	Incentivize businesses to include electric vehicle charging stations			□	
38	Promote and use Partners for a Clean Environment (PACE) sustainability services for businesses, and collaborate on a green business recognition program.	□			
39	Adopt programs to improve ease-of-use for the first and final mile of commuter pathways			□	
40	Improve walkability through cross-walks and safe school routes with BVSD partnerships		□		
Waste					
41	Expand recycling programs to include hard to recycle materials (e.g. electronics and pharmaceuticals)				□
42	Install triple-bin (recyclables, compostable, trash) waste collection at City facilities and parks as applicable		□		
43	Establish City purchasing guidelines that consider impact from product life-cycles			□	
44	Partner with local retailers to reduce the use of non-recyclable, non-compostable, and non-reusable containers			□	
45	Increase awareness through City's online sources regarding options for hard to recycle materials	□			
46	Encourage Home Owner Associations to offer the same level of waste services (e.g. compost) as the community			□	
47	Promote and use Partners for a Clean Environment (PACE) sustainability services for businesses, and collaborate on a green business recognition	□			
48	Promote recyclable substitutes/replacements for single use, throw-away items, such as plastic bags, foam clamshell food containers, disposable plastic water bottles, etc.		□		
49	Promote markets for city-wide generated recyclables and compost		□		
50	Encourage use of County Hazardous Materials Management Facility through the no co-pay program	□			
51	Support commercial food composting			□	
52	Provide free waste audits for businesses and support zero waste implementation by promoting services of Partners or a Clean Environment (PACE) program		□		
Local Food & Agriculture					
53	Encourage additional Community Garden locations throughout Louisville				□
54	Conduct workshops for community gardening				□
55	Allow citizens to sell locally produced items such as eggs, honey and produce			□	
56	Provide resource information about local food economy	□			
57	Track Community Supported Agriculture participation				□
Percentage of Progress:		28%	33%	23%	16%

Appendix C: Recommended Actions from Sustainability Action Plan Strategies

Following is a list of recommended actions that includes information on the relevant strategy from the Sustainability Action Plan, stakeholders, timeframe, funding and impact on the Sustainability Sub-Program. Actions identified as top priorities for 2018 and 2019 are also indicated.

Energy Recommendations

New Recommended Action Step	Relevant Strategy from 2016 Sustainability Action Plan	Stakeholders									Timeframe Estimate				Funding			Sustainability Sub-Program Measures Addressed					Top Action for 2018 & 2019					
		Finance	Public Works	Planning	City Manager	Econ Dev	Library	Police	Parks & Rec	Boards/Comm	Council	<6 months	<12 months	<18 months	<24 months +	Ongoing	Within budget	Requires add'l budget	Grant funds likely	Funding TBD	Waste Diversion	GHG Emissions	Water use per capita	Energy use per capita	City facilities: BTUs/ft2	% of City Fleet using alt fuels	City facilities: Energy savings from upgrades	***
<u>Work with Xcel Energy to provide certain percentage of community's energy through alternative sources.</u>	<u>CE-IT1S2: "Set new goals for GHG reductions"</u>									X	X										X			X				***

[illegible]

Water Recommendations

New Recommended Action Step	Relevant Strategy from 2016 Sustainability Action Plan	Stakeholders									Timeframe Estimate				Funding				Key Performance Indicators Addressed				Top Action for 2018 & 2019					
		Finance	Public Works	Planning	City Manager	Econ Dev	Library	Police	Parks & Rec	Boards/Comm	Council	<6 months	<12 months	<18 months	<24 months +	Ongoing	Within budget	Requires add'l budget	Grant funds likely	Funding TBD	Waste Diversion	GHG Emissions	Water use per capita	Energy use per capita	City facilities: BTUs/ft2	% of City Fleet using alt fuels	City facilities: Energy savings from upgrades	***
Encourage language for encouraging quality drought resistant landscaping should be included in the new Design Guidelines.	W-IT2S2: "Encourage quality drought resistant landscaping through the development review process."			X						X	X					X						X						***
Conduct a gap analysis for community resources for water efficiency tools, to be maintained annually to identify gaps and inform outreach initiatives.	W-ET1S1: "Conduct a gap analysis for the water efficiency tools, resources and incentives."		X		X							X			X	X							X					
Perform an audit on City building plumbing fixtures and determine what replacements may be made to meet or exceed current code.	W-IT1S2: "Replace or retrofit city building plumbing fixtures to meet or exceed current code requirements."		X									X							X				X					
Plans for a Stormwater Master Plan should be further developed, including a timeline and potential funding source.	W-IT2S1: "Create a community-wide green infrastructure plan to capture and infiltrate rain water where it falls, thus reducing storm water runoff."		X	X	X								X				X	X	X				X					
Consider expanding re-use water system (i.e. Heritage Park, Miners Park).	W-IT3S1: "Use non-drinking water systems to meet residential, industrial, and agricultural needs when feasible."		X							X				X					X				X					

The desire to create a community-wide green infrastructure plan to capture and infiltrate rain water should be added to the future Stormwater Master Plan.	W-IT2S1: "Create a community-wide green infrastructure plan to capture and infiltrate rain water where it falls, thus reducing storm water runoff."		X	X					X	X	X				X				X		X							
The desire to remove Coal Creek from the list of polluted waters should be added to the future Stormwater Master Plan.	W-IT4S2: "Aim to have Coal Creek removed from State's list of impaired or polluted waters."		X	X	X				X	X	X				X				X									
Continue to benchmark water use for City facilities, annually, using data to inform plans for conservation and/or infrastructure replacements.	W-IT1S1: "Benchmark all City buildings' indoor water use."		X	X											X	X					X							
Continue to promote local water conservation and water quality programs to Louisville residents and businesses on the City's website, via community alerts, through the City's water bill inserts and any other appropriate channel.	W-ET1S2: "Promote and continue to use local water quality programs including: Keep it Clean; Boulder Area Sustainability Information Network (BASIN); PACE; Center for ReSource Conservation; Slow the Flow; and EnergySmart."		X	X	X					X					X	X					X							
Continue to audit, manage and upgrade infrastructure to reduce leaks in the water metering system.	W-IT1S4: "Manage and upgrade infrastructure to reduce leaks in the system."		X												X	X					X							
Continue to update equipment and procedures to promote sustainability & limit environmental impacts.	W-IT4S1: "Continue to update equipment and procedure manuals related to water use, wastewater and storm water treatment and incorporate methods to promote sustainability & limit environmental impacts."		X												X	X					X							

Transportation Recommendations

New Recommended Action Step	Relevant Strategy from 2016 Sustainability Action Plan	Stakeholders										Timeframe Estimate				Funding			Key Performance Indicators Addressed						Top Action for 2018 & 2019			
		Finance	Public Works	Planning	City Manager	Econ Dev	Library	Police	Parks & Rec	Boards/Comm	Council	<6 months	<12 months	<18 months	<24 months +	Ongoing	Within budget	Requires add'l budget	Grant funds likely	Funding TBD	Waste Diversion	GHG Emissions	Water use per capita	Energy use per capita	City facilities: BTUs/sq ft	% of City Fleet using alt fuels	City facilities: Energy savings from upgrades	***
Explore adding Electric Vehicle Supply Equipment (EVSE) build-out into new Planned Unit Development (PUD) guidelines for general waivers or parking waivers.	T-ET2S3: "Incentivize businesses to include electric vehicle charging."			X	X					X	X					X					X							***
Consider adding bike-to-work as an incentive in the Employee Wellness program.	T-IT2S1: "Offer incentives to City Staff such as: bus / carpool / vanpool subsidies, Bike-to-Work incentives, bike parking and shower facilities."				X						X					X					X							
Consider the development of a Louisville-specific map for residents showing all non-vehicle access points.	T-ET2S2: "Develop bike maps and way finding signage."		X								X					X					X							

[illegible]

Waste Recommendations

New Recommended Action Step	Relevant Strategy from 2016 Sustainability Action Plan	Stakeholders										Timeframe Estimate				Funding				Key Performance Indicators Addressed						Top Action for 2018 & 2019	
		Finance	Public Works	Planning	City Manager	Econ Dev	Library	Police	Parks & Rec	Boards/Comm	Council	<6 months	<12 months	<18 months	<24 months +	Ongoing	Within budget	Requires add'l budget	Grant funds likely	Funding TBD	Waste Diversion	GHG Emissions	Water use per capita	Energy use per capita	City facilities: BTUs/ft2	% of City Fleet using alt fuels	City facilities: Energy savings from upgrades
A 96-gallon rolling bin should be kept at City Services for the purpose of compost collection at the end of City-sponsored events.	Ws-IT1S2: "Install triple bin (recyclable, compostable, trash) waste collection at City facilities and parks as practical."		X		X						X					X				X							
Consider requiring all retailers participating in City events to use compostable food service products <u>for events with over 50 attendees</u> .	Ws-ET1S1: "Partner with local retailers to reduce use of non-recyclable, non-compostable, and non-reusable containers."									X	X					X				X	X						
Consider inclusion of “room for composting” requirement and/or incentives in the new Design Guidelines and new future building codes.	Ws-ET3S1: "Support commercial food composting."			X						X	X					X				X	X						
An inventory should be taken of all parks and facilities to determine which facilities need bins for diversion (e.g. recycling or composting). An analysis of cost should be made, as well as expected challenges and recommendations.	Ws-IT1S2: "Install triple bin (recyclable, compostable, trash) waste collection at City facilities and parks as practical."		X		X					X		X							X	X							

Consider centralizing all purchases through one vendor to streamline eco-friendly product selection and to utilize competitive pricing by setting up contract items. If centralizing through one vendor is not desirable or possible, then continue current relationships, applying a Green Purchasing Policy to purchase decisions.	Ws-IT1S3: "Establish City purchasing guidelines that consider impact from product lifecycles."	X			X						X				X			X	X						
Adopt Green Purchasing Guidelines that promote the purchase of eco-friendly products when there is a choice and the selection is not cost-prohibitive. These guidelines would continue to favor local purchases over eco-friendly purchases.	Ws-IT1S3: "Establish City purchasing guidelines that consider impact from product lifecycles."	X			X					X	X				X			X	X						
Consider a campaign to encourage Louisville residents to use reusable bags for shopping.	Ws-ET1S1: "Partner with local retailers to reduce use of non-recyclable, non-compostable, and non-reusable containers."				X						X				X			X	X						
The City should determine whether it is possible to chip wood mulch smaller for increased use by residents.	Ws-ET2S2: "Promote markets for Citywide generated recyclables and compost."		X								X					X	X	X							
Determine whether the Louisville Spring Clean-Up could include the collection of Hard-to-Recycle items.	Ws-IT1S1: "Expand recycling programs to include hard to recycle materials (e.g. electronics and pharmaceuticals)."		X		X					X				X	X	X	X	X							
<u>Continue providing branch recycling and leaf drop-off services and restart metal recycling service.</u>	<u>Ws-IT1S1: "Expand recycling programs to include hard to recycle materials (e.g. electronics and pharmaceuticals)."</u>									X	X				X			X							***
Inventory parks for functional drinking water fountains and plan for repairs or upgrades, accordingly.	Ws-ET2S1: "Promote recyclable substitutes/replacements for single use throw-away items, such as plastic bags, foam clamshell food containers, disposable plastic water bottles, etc."		X						X	X					X		X	X	X						
Consider an ordinance to require all Louisville businesses to recycle and compost, using the licensed hauler of their choice.	Ws-ET1S1: "Partner with local retailers to reduce use of non-recyclable, non-compostable, and non-reusable containers."		X		X					X					X			X	X						***

Local Food and Agriculture Recommendations

New Recommended Action Step	Relevant Strategy from 2016 Sustainability Action Plan	Stakeholders								Timeframe Estimate				Funding				Key Performance Indicators Addressed					Top Action for 2018 & 2019					
		Finance	Public Works	Planning	City Manager	Econ Dev	Library	Police	Parks & Rec	Boards/Comm	Council	<6 months	<12 months	<18 months	<24 months +	Ongoing	Within budget	Requires add'l budget	Grant funds likely	Funding TBD	Waste Diversion	GHG Emissions		Water use per capita	Energy use per capita	City facilities: BTUs/ft2	% of City Fleet using alt fuels	City facilities: Energy savings from upgrades
Determine a process to give suitable weight to public green spaces during development and renovation projects.	L-IT1S1: "Encourage additional community garden locations throughout Louisville."			X					X	X	X									X		X						***
Continue Sustainability Series to educate the public and consider including new topics such as community gardens, composting and the green business program.	L-IT1S2: "Conduct workshops for community gardening."				X				X		X					X					X							***
The City should consider adopting zoning regulations to allow vendors more flexible sales of locally produced goods, such as from their own lots.	L-ET1S1: "Allow citizens to sell locally produced items such as eggs, honey and produce."			X	X					X			X			X					X							
Continue to work with local resident led groups to enable community gardens, if desired.	L-IT1S1: "Encourage additional community garden locations throughout Louisville."		X	X	X				X						X					X		X						

2-Year Work Plan for the Louisville Sustainability Action Plan

~~February~~ March 2018

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Appendix A: Notes on Sustainability Action Plan Strategies

Appendix B: Progress of Sustainability Action Plan Strategies

Appendix C: Recommended Actions from Sustainability Action Plan Strategies

Overview

In November 2016, the Louisville City Council approved the Louisville Sustainability Action Plan (SAP), developed by the Louisville Sustainability Advisory Board (LSAB). The SAP is divided into five sustainability categories: Climate & Energy, Water, Transportation, Waste, and Local Food and Agriculture. The SAP expresses the desires of the City to make progress toward sustainability, both internally in the operations of the City facilities, and externally through the actions of the Louisville residential and business community. Intended as a supplement to the SAP, this 2-Year Work Plan sets specific, time-bound outcome goals for the City to implement the strategies in the SAP and achieve the objectives of the City's Sustainability Sub-Program.

Goals & Objectives

The goal of the 2-Year Work Plan is to provide an assessment of progress made since the adoption of the SAP and to recommend actions that may reasonably be performed within 24 months to further the City's progress. The 2-Year Work Plan should also help the City achieve the objectives of the Sustainability Sub-Program, which includes using environmental, economic and human resources to meet present and future needs without compromising the ecosystems on which we depend and actively pursuing energy efficient upgrades to realize cost savings and reducing environmental impacts.

The performance measures for the Sustainability Sub-Program include:

- Percent of waste generation and diversion for community
- British Thermal Units (BTUs) per Gross Square Foot for City facilities
- Greenhouse gas (GHG) emissions per capita from home energy consumption
- Water use per capita
- Energy use per capita
- Percent of City fleet using alternative fuels
- Cost savings from energy upgrades for City operations

Definitions

British Thermal Units – Measure of heat content of fuels or energy sources (*US Energy Information Administration*).

Energy Efficiency – Refers to the reduction of energy consumption for a given service (*Louisville Sustainability Action Plan*).

Greenhouse Gas – Gases (i.e. Carbon Monoxide, chlorofluorocarbons) that contribute to the greenhouse effect by absorbing infrared radiation (*Louisville Sustainability Action Plan*).

Raw Water – Water in its natural state, prior to any treatment for drinking (*US Environmental Protection Agency*).

Sustainability – Creating balance among the environment, the economy and society to ensure that practices and decisions do not compromise the quality of life for future generations (*Louisville Sustainability Action Plan*).

Method

To create this 2-Year Work Plan, the following method was used:

- 1) **Input.** Sustainability Input Interviews were conducted with relevant department heads, as well as with select stakeholders within departments, in order to capture sustainability input regarding the 57 strategies outlined in the SAP. These interviews provided critical information regarding the resources required to complete these projects, but it also made the process of prioritizing projects an inclusive one. In all, the 2-Year Work Plan represents input from stakeholders across all City departments, LSAB and City Council.
- 2) **Research.** Using the input and direction provided, existing programs and projects in the City were further researched across departments. Neighboring communities were interviewed as well in order to gain insight regarding technical soundness, best practices and lessons learned. These notes may be found in *Appendix A: Notes on Sustainability Action Plan Strategies*.
- 3) **Progress.** Input and research informed the determination of progress made on the strategies in the SAP. A progress chart may be found in *Appendix B: Progress Made on Sustainability Action Plan Strategies*.
- 4) **Analysis.** Stakeholder support, timeframe, funding and impact on the Sustainability Sub-Program were considered when identifying recommended actions. The list of recommended actions can be found in *Appendix C: Recommended Actions from Sustainability Action Plan Strategies*.

Top Recommended Actions for 2018-2019

The top recommended actions were identified as projects that can be completed in the next 24 months, are within budget and had the largest impact on the Sustainability Sub-Program. There is not a specific formula for the top recommended actions, but rather the recommendations of LSAB and staff based on the factors identified above, such as timeframe, budget and performance/impact. The City should pursue the following top recommended actions in 2018 and 2019:

- Evaluate the adoption of updated building codes to the further advancement of energy efficiency in new buildings.
- Explore guidelines favoring energy efficiency in the new Planned Unit Development (PUD) Guidelines as potential “waiver criteria” and adding Electric Vehicle Supply Equipment (EVSE) build-out for general or parking waivers.
- Consider adopting a policy recognizing a suitable standard incorporating energy and water conservation (i.e. LEED Gold, Green Globe) for new construction of municipal facilities.
- Apply for a Regional Air Quality Council (RAQC) grant to install an electric vehicle charging station (EVSE) at the Recreation Center in 2018.
- Work with Xcel Energy to provide certain percentage of community’s energy through alternative sources.
- Encourage Language ~~encouraging for~~ quality drought resistant landscaping ~~should be included~~ in the new Design Guidelines.
- Add Electric Vehicle Supply Equipment (EVSE) build-out into a guideline list in the current Planned Unit Development (PUD) project.
- Develop a Transportation Master Plan to define and analyze transportation priorities, identify alternative modes of transportation and consider needs for alternative transportation solutions.
- ~~Consider~~ Require all retailers participating in City events to use compostable food service products for events with over 50 attendees.
- Consider inclusion of “room for composting” requirement and/or incentives in the new Design Guidelines and new future building codes.
- Continue providing branch recycling and leaf drop-off services and restart metal recycling service.
- Consider an ordinance to require all Louisville businesses to recycle and compost, using the licensed hauler of their choice; require all haulers collecting recyclables and compost to report weights annually to the City; and require all HOAs to offer recycling and composting along with their trash service, using the hauler of their choice.
- Continue Sustainability Series to educate the public and consider including new topics such as community gardens, composting and the green business program.
- Complete ongoing projects.

Conclusion

The top recommended actions in the 2-Year Work Plan aim to achieve the strategies identified in the Sustainability Action Plan in 2018 and 2019.

These actions address the fulfillment of the various SAP strategies compiled by LSAB and adopted by City Council in 2016 for the purpose of Louisville's fiscal and environmental sustainability.

In exploring implementation of the top recommended actions, the City should consider the cost-benefit analysis for each item to determine the potential resources and impact on the Sustainability Sub-Program. Additional background information may also be needed for policy decisions.

As stated above, additional notes have been provided to the LSAB with further explanation for many of the recommendations, as well as a list of recommendations regarding updating some of the strategies.

To keep these strategies relevant and up-to-date, it is recommended that the LSAB review and update the SAP every two years. The 2-Year Work Plan should also be reviewed and updated by staff every two years to correspond with the revised SAP.